

APPENDIX D  
ECONOMIC IMPACT

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THE ECONOMIC IMPACT  
OF  
MESA FALCON FIELD  
AIRPORT

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## TABLE OF CONTENTS

HIGHLIGHTS .....	1
AVIATION AND ECONOMIC GROWTH .....	4
COMPUTING ECONOMIC IMPACTS .....	5
IMPACT OF MCDONNELL DOUGLAS HELICOPTER COMPANY .....	6
ECONOMIC IMPACT OF AIRPORT EMPLOYERS .....	8
ECONOMIC IMPACT OF GENERAL AVIATION -- BASED AIRCRAFT .....	11
ECONOMIC IMPACT OF GENERAL AVIATION -- OVERNIGHT VISITORS .....	13
AIRPORT REVENUES .....	16
THE FUTURE .....	18
APPENDICES .....	23

## HIGHLIGHTS

- o Mesa Falcon Field has been a significant economic presence in the East Valley for some 50 years. The total economic impact of Mesa Falcon Field Airport was \$751 million in 1991. This estimate includes both direct and secondary (or "multiplier") effects, as explained below. A total of 11,700 jobs in the East Valley area were supported by the presence of the airport during the year. On a daily basis, the airport provides a revenue stream of Economic Activity that exceeds \$2 million per day.

- o The largest employer on the airport is the McDonnell Douglas Helicopter Company, with 3,558 workers at the end of 1991. The total economic impact, including multiplier effects, was \$677 million, accounting for slightly more than 80 percent of the direct impact of the airport on the local economy.

- o There were 520 persons working for 49 additional employers located on or adjacent to the airport in 1991. These airport businesses and government agencies created a direct economic impact -- without incorporating multiplier effects -- of \$29.5 million. Payroll disbursements during the year to airport workers summed to \$11.7 million. Allowing for multiplier effects, the total economic impact of airport employers other than McDonnell Douglas was \$50 million in 1991.

- o Airport businesses such as FBO's directly involved in aviation had a workforce of 271 during 1991, with payroll outlays of \$4.6 million. Expenditures by airport businesses for wages, supplies,

materials, services, and general operations created a direct impact of aviation firms (other than McDonnell Douglas Helicopter) of \$19.8 million, and a total impact of \$30.2 million, including multiplier effects.

- o One half of the business of FBO's at Mesa Falcon Field Airport depends on sales and services to owners of aircraft not based on the airport. Falcon Field firms regularly draw customers from throughout the region.

- o Airport tenants are a separate category of employer not necessarily linked to aviation. Airport tenants provided jobs for 102 employees and had a direct economic impact of almost \$3 million. Accounting for multiplier effects, the total contribution of airport tenants was \$5.5 million to the local economy.

- o Government employers located at Falcon Field include the Federal Aviation Administration, the Mesa Police Department, the Mesa Fire Department, the Maricopa County Sheriff's Department and the airport administration. The total employment of these agencies was 127 workers bringing home payroll checks totalling \$5.6 million for the year. The direct economic impact of government employers on the airport was \$6.8 million, with a total impact of \$14.6 million, including multiplier effects.

- o Falcon Field is one of the most popular destinations in the Southwest for general aviation travelers. During 1991, Falcon Field served 1,288 overnight visiting aircraft whose owners stayed an average of 4.2 nights in the Greater Phoenix area. General aviation visitors spent \$1.8 million in the metropolitan area during the year.

o The local tourism industry was also enhanced by international and domestic visitors to the McDonnell Douglas facility. Officials estimate some 7,200 of these visitors spent at least one night in the metropolitan area, incurring expenses for food and lodging with a combined value exceeding \$800,000 and an economic impact of \$1.5 million after accounting for multiplier effects.

o General aviation aircraft based at Falcon Field have an estimated market value exceeding \$39 million. Combining both recreational and business flights, these aircraft completed more than 25,000 round trips during 1991, logging some 16.3 million miles of travel. The total charter equivalent value of general aviation trips by aircraft based at Falcon Field was \$18.8 million.

o Although airports are publicly owned, they usually impose limited burden on the taxpayer. Falcon Field Municipal Airport creates revenues which are applied against operating costs. During fiscal year 1990 - 1991, revenues to the airport

totaled more than one million dollars. Operating revenues have exceeded one million dollars in each year since 1987 - 1988.

o Sales and use taxes revenues attributable to the presence of Mesa Falcon Field Airport were estimated at \$5.5 million in 1991.

o During the past decade, the airport received federal, state, and country grants totaling more than \$3 million to provide for continuous improvement in safety and service. In 1991, the airport was awarded a state grant of more than \$1.1 million for improvements.

# ECONOMIC IMPACT OF MESA FALCON FIELD AIRPORT: 1991

	DIRECT IMPACT			TOTAL IMPACT (Includes All Multiplier Effects)		
Source	Employment	Payroll (\$000)	Economic Activity (\$000)	Employment	Payroll (\$000)	Economic Activity (\$000)
Airport Business and Agencies	520	11,658	29,493	922	19,423	50,215
McDonnell Douglas Helicopter Company	3,558	183,700	225,700	10,674	334,922	677,100
General Aviation: Based Aircraft			18,776			18,776
General Aviation: Visitors	39	576	1,808	73	1,000	3,432
McDonnell Douglas Helicopter Company: Visitors	17	257	806	31	446	1,530
TOTALS	4,134	\$196,191	\$276,583	11,700	\$355,791	\$751,053

## AVIATION AND ECONOMIC GROWTH

Aviation historically has been an important catalyst for economic growth and development in Arizona. Excellent flying weather contributed to the selection of Arizona as a site for military aviation training and testing facilities during and after World War II. Research and manufacturing facilities followed as producers discovered Arizona's dry climate was particularly favorable for aviation assembly and testing. The Western lifestyle also proved an attractive asset for relocating aeronautical engineers and other skilled workers to the Grand Canyon State.

While Arizona's aerospace manufacturing facilities were increasing in size and number, air passenger travel to the state soared after 1960, as business activity and tourism expanded. Passenger traffic at Sky Harbor international airport has tripled in each of the past three decades. Terminal construction has continued to meet the demands of air travelers, and airline employment in the area has increased.

During 1990, Arizona led the nation in the rate of growth of transportation employment, largely because of airline expansion at Sky Harbor International Airport.

Statewide, the economic impact of aviation in 1989, including all multiplier effects, exceeded \$16 billion. There were nearly 80,000 workers involved in the aviation industry, including manufacturing, commercial airlines, education, and general aviation.

General aviation is particularly important to Arizona's economy. At the end of 1991, there were 4,841 general aviation aircraft registered in the state and over 15,000 pilots. Users of general aviation aircraft include large and small business, medical services, public agencies, and private citizens.

In 1989, the Arizona economic impact of general aviation included 5,549 workers in aircraft sales and services, earning a payroll of more than \$100 million. Including all multiplier effects, general aviation in 1989 contributed over one half billion dollars to the Arizona economy.

Due in part to the emerging importance of aerospace as a major employer and continuing improvement of aviation facilities, Arizona ranked as one of the leading growth states of the nation during each decade after 1950. Similarly, the greater Phoenix metropolitan region is consistently among the fastest growing metropolitan areas.

The most rapidly growing portion of the greater Phoenix metropolitan area is known as the East Valley. The largest city in the East Valley area is Mesa, home of a number of major employers and the site of Falcon Field Municipal Airport. In 1990, Mesa was the second largest city in the greater Phoenix metropolitan area and the third largest in Arizona.

Between 1980 and 1990, Mesa added more than 125,000 residents and grew at a rate exceeding 80 percent for the decade.

A key attraction for economic development in the East Valley area is the proximity of Falcon Field. The airport is located 7 miles from downtown Mesa and provides services to one of the most rapidly growing areas in the nation.

Itinerant operations declined during the latter part of the 1980's as employment growth began to slow in the local economy. The number of based aircraft also fell during this period. Total operations, itinerant operations, and based aircraft have been rising during the past year.

#### COMPUTING ECONOMIC IMPACTS

The presence of an airport has a beneficial impact on economic development. Businesses often choose to locate near transportation centers. In the past, railheads and waterways were important in attracting commerce. However, in recent times, modern aviation facilities typically play a significant role in stimulating general economic activity in a growing metropolitan area.

Studies show that two out of every three Fortune 500 companies use aircraft in their business to transport goods, mail, materials, and personnel. Companies that operate general aviation aircraft consistently record net income as a percent of sales approximately 50 percent greater than companies not utilizing such aircraft.

Adequate general aviation facilities, properly promoted and funded, are necessary to ensure that a region fully participates in the modern economy.

In addition to exerting a positive influence on economic development in general, aviation facilities also create income and add value to a region through the employment, payroll, and economic activity of the businesses and government agencies located on the airport. Thus, airports are sources of measurable economic impacts.

There are two types of economic impacts associated with activity on Mesa's Falcon Field Airport. The first of these is known as the DIRECT economic impact. This impact includes the jobs, payroll, and other spending created by those firms and government agencies directly involved in providing services and products on the airport.

The initial or direct economic impact induces the SECONDARY impact which creates jobs and spending in the general economy as the direct expenditures circulate throughout the community.

Secondary impacts are often referred to as "second-round" or "multiplier" effects. The sum of direct and secondary impacts is the TOTAL economic impact of the airport.

#### Direct Impact

The direct economic impacts of the airport include wages and salaries paid to those who work for airport business and government agencies, as well as all other operating expenditures made by these employers. These outlays include purchases of materials, equipment, supplies and services from local vendors, construction, and payments to governments. Airport employers infuse dollars into the East Valley economy as they meet their



payrolls and purchase goods and services.

The sum of payroll outlays and all other spending is referred to as Economic Activity in this study. Data on payroll and other spending for 1991 were obtained from a survey of employers on and nearby the airport.

Economic Activity originated by private sector firms associated with the airport is normally equivalent to annual revenues or receipts. For government agencies, Economic Activity is equivalent to the annual operating budget.

The value of travel by those who fly general aviation aircraft based at Falcon Field is an additional important component of the economic impact of the airport. Since there are no market transactions to establish a price and value for travel by owners of private aircraft, trips by these owners were valued at Charter Equivalent Value, the cost that would have been incurred to charter an airplane to travel the same distance. Data on general aviation travel during 1991 were obtained through a survey of owners of aircraft based at Falcon Field.

### Secondary Impacts

In contrast to initial or direct spending impacts, secondary impacts measure the magnitude of successive rounds of respending as dollars are spent by those who work for or sell products to airport employers. For example, when an aircraft mechanic's wages are spent to purchase food, housing, clothing, and medical services, these dollars create additional rounds of spending to support

jobs and income in the general economy of the entire East Valley area.

Secondary or multiplier impacts were calculated using Arizona coefficients from the Regional Input-Output Modeling System (RIMS II) developed by the U. S. Department of Commerce. The RIMS II model is widely used for analysis of economic impacts of airports and aviation related projects, as well as impacts of other major employers. (For further information on the RIMS II model, contact the Regional Economic Analysis Division, Bureau of Economic Analysis, U. S. Department of Commerce, Washington, D. C. (202) 523 - 0594.)

### IMPACT OF MCDONNELL DOUGLAS HELICOPTER COMPANY

The largest employer on the airport is the McDonnell Douglas Helicopter Company. The \$40 million assembly plant and testing facility covers some two million square feet of land located directly north of McDowell Road.

The facility is involved in the design and production of commercial and military helicopters, including the MD 500 series of light helicopters and the AH-64 Apache attack helicopter, regarded as the world's most advanced combat rotorcraft. The facility also is a development center for the production of helicopters designed to fly without a tail rotor, aimed at a wide range of potential civilian and corporate applications.

The McDonnell Douglas Helicopter installation includes an Apache assembly line, administration buildings, and

engineering center. In addition, 14 laboratories are housed in the 340,000 square foot Advanced Development Center.

Employment was 3,558 in 1991, with a payroll of \$183.7 million. Direct expenditures by McDonnell Douglas Helicopter for payroll, supplies, facilities, equipment, other procurement, and general operations were stated by McDonnell Douglas officials to total \$225.7 million of Economic Activity.

The engineers and skilled workers employed at the facility supported a significant number of secondary jobs and earnings in other sectors of the economy due to their substantial purchasing power.

According to an independent analysis by McDonnell Douglas staff, the facility's 3,558 employees created total Economic Activity of \$677 million and an additional 7,116 jobs in such sectors as health services, retailing, construction, and finance, due to multiplier effects.

Accounting for all secondary and multiplier effects, the total employment impact of the Mesa McDonnell Douglas Helicopter Company facility was 10,674 jobs and a payroll of \$334.9 million.

It is important to note that procurement by McDonnell-Douglas in Arizona is less than the industry average for aerospace facilities. Typically, direct economic activity is about three times payroll in aerospace and aviation manufacturing. At the Mesa facility, economic activity is only 1.23 times greater than payroll.

A gap between actual and potential direct impact of up to \$300 million exists. If appropriate suppliers were available in Arizona, the potential direct impact of McDonnell-Douglas Helicopter Company would range to \$500 million, instead of the current level of \$225.7 million.

McDonnell Douglas Helicopter Company also attracts a large number of visitors who make expenditures and support the local tourism industry. Officials estimate that, during an average month, some 600 visitors to the McDonnell Douglas Helicopter Company site stay overnight before or after their plant tours and meetings.

Over one third of visitors are international in origin. Domestic visitors include military personnel as well as civilian suppliers, subcontractors, scientists, researchers, and others affiliated with the aerospace industry.

According to the Phoenix and Valley of the Sun Visitors and Convention Bureau, overnight business travelers spend \$112 per day, including lodging expenses. The estimated 7,200 visitors to McDonnell Douglas Helicopter Company thus spent \$806,400 in the area, creating 17 jobs directly and supporting payroll of \$257,000.

When multiplier effects are included, McDonnell Douglas visitors had a total impact in 1991 of \$1.5 million (see summary table, page 3, and Appendix C).

ECONOMIC IMPACT OF MCDONNELL DOUGLAS HELICOPTER					
DIRECT IMPACT			TOTAL IMPACT		
Employment	Payroll	Economic Activity	Employment	Payroll	Economic Activity
3,558	\$183.7 mil	\$225.7 mil	10,674	\$334.9 mil	\$677.1 mil

Source: Direct and total impact figures provided by McDonnell Douglas Helicopter Company (figures shown here do not include overnight visitor impact)

#### ECONOMIC IMPACT OF AIRPORT EMPLOYERS

In addition to McDonnell Douglas Helicopter Company, there were 49 employers located on or nearby Falcon Field Municipal Airport during 1991, providing jobs for 501 workers. The direct Economic Activity associated with these firms and government agencies summed to \$26.6 million.

Incorporating the multiplier effects of secondary spending, the 1991 total Economic Activity associated with aviation firms, tenants, and government agencies was \$44.9 million.

#### FBO's And Aviation Firms

There are 26 private businesses based on the airport offering a range of goods and services related to aviation. Some firms deal with other businesses or government agencies, some provide services to aircraft owners, and others serve the general public. Included are charter services, fixed base operators, aircraft sales outlets, training, and firms involved in major overhaul and refurbishing of aircraft. FBO's

report that approximately one half of their business is from sales and service to aircraft not based at Falcon Field.

Unique among the airport businesses is the Champlin Fighter Museum. The 50,000 square foot facility houses over twenty historic fighter planes from World Wars I and II, as well as a sizeable collection of diverse aviation memorabilia.

A major source of economic activity on the airport is the overhaul, refurbishing, and manufacturing of aircraft. Total sales by these firms approached \$10 million in 1991, with employment of 150 persons.

FBO's and aviation related firms at Mesa Falcon Field Airport employed 290 persons in 1991, with a payroll of \$5 million. The direct expenditures of these firms for workers, supplies, materials, services, and all other local procurement and outlays combined to create Economic Activity of \$19.8 million.

Accounting for multiplier effects, airport FBO's and other aviation related firms supported total Economic Activity of \$30.2 million in 1991. A total of 540 jobs in the local area were attributable to the

presence of aviation employers at Falcon Field.

### Airport Tenants

Airport tenants include some businesses that are not necessarily dependent upon aviation. However, in many cases, the airport location is a convenience for business travel or for use of private aircraft for other purposes.

During 1991, there were 103 employees of airport tenants, earning a payroll of \$1.1 million. This figures includes a number of part time faculty at Embry Riddle Aeronautical University.

Airport private sector tenants were associated with direct Economic Activity of \$2.9 million. After allowance for multiplier effects, the total Economic Activity attributable to tenants of the airport was \$5.5 million.

### Government Agencies

Aviation-related government agencies located at Falcon Field include the Federal Aviation Administration, the Mesa Police Air Support Unit (a hangar and aircraft repair facility), the Maricopa County Sheriff's department, and the airport administration.

Government tenants include the Mesa Police and Fire Departments. These units are available to serve the entire community and, therefore, are similar in character to other non-aviation tenants located at the airport.

The combined employment of these agencies is 127 workers who brought home payroll checks totaling \$5.6 million in 1991. The combined budgets for government agencies was \$6.8 million. Including multiplier impacts, the total economic contribution of government agencies on the airport was \$14.6 million of Economic Activity for the local economy.

Police employment at the airport includes personnel at a police substation as well as at the police Air Support Unit. Substation personnel are available to serve the entire community, while the Air Support Unit is a hangar and repair facility for police helicopters.

Including multiplier impacts, the total economic contribution of government agencies on the airport was \$14.6 million of Economic Activity for the local economy.

### Summary

In summary, the 520 workers at the 49 businesses and agencies on the airport supported an additional 472 jobs in the community to provide a total employment impact of 922.

The total Economic Activity of airport businesses of \$50.2 million converts to a revenue stream of \$137,534 per day for the local economy, after all multiplier effects have been calculated.

ECONOMIC IMPACT OF AIRPORT BUSINESSES AND AGENCIES						
DIRECT IMPACT				TOTAL IMPACT		
Source	Employment	Payroll (\$Mil)	Economic Activity (\$Mil)	Employment	Payroll (\$Mil)	Economic Activity (\$Mil)
FBO's and Aviation Related	290	\$5.0	\$19.8	540	\$10.3	\$30.2
Tenants	103	1.1	2.9	145	1.9	5.5
Government Agencies	127	5.6	6.8	237	7.2	14.6
TOTALS	520	\$11.7	\$29.5	922	\$19.4	\$50.2

#### AIRPORT BUSINESSES

- o Air Ambulance
- o Air Taxi
- o Aircraft Building
- o Charter Services
- o Aircraft Cleaning
- o Maintenance
- o Parts
- o Aircraft Rental
- o Repair Services
- o Aircraft Sales
- o Auto Rental
- o Avionics
- o Corporate Travel
- o Education
- o Flight Training
- o Food Service
- o Fuel Services
- o Museum

## ECONOMIC IMPACT OF GENERAL AVIATION -- BASED AIRCRAFT

Falcon Field offers a variety of hanger and tiedown facilities for owners of general aviation aircraft. At the end of 1991, there were 690 aircraft based at Falcon Field.

The value of based aircraft ranged from over \$1 million to less than \$10,000 with an average of \$56,690. The total value of all based aircraft was \$39.1 million. The median value of Falcon Field aircraft was \$35,000, reflecting the influence of higher priced airplanes on the computed average value. (The median value is the mid point of the distribution -- one half have a greater value and one half have a lower value).

These aircraft were used for both recreational and business purposes. The typical aircraft flew more than 23,000 miles during the year, about evenly distributed between business and recreational mileage.

The average aircraft flew 15 business trips during the year and 22 recreation trips (flights for training are not included). The average business trip was 774 miles round trip, while the average recreational trip was 532 miles.

In total, there were an estimated 15,426 recreational trips taken by owners of aircraft based at Falcon Field in 1991. Total recreational miles flown summed to 8.2 million. At 2.4 persons per trip, the total recreational passenger miles flown was 19.7 million.

The charter-equivalent value of the typical recreational flight was \$662, based on current charter rates from Falcon Field

(this rate includes two hours of turn-around time at the destination). Valuing these recreational flights at their charter cost, recreational travel had an economic value of \$10.2 million in 1991.

There were 10,508 business trips estimated for Falcon Field general aviation flyers. The average distance flown was 774 miles, yielding a total of 8.1 million business miles. The average business travel party was 2.5 persons and therefore total business passenger miles flow by general aviation aircraft was 20.3 million miles.

A number of benefits of business aircraft have been identified by human resource and time management experts. In addition to time saving as compared to scheduled airlines, other benefits include improved flexibility, improved productivity, and enhanced effectiveness of the organization.

The charter equivalent value of business travel does not measure these benefits directly. However, it is reasonable to assume that the pricing structure for charter services incorporates and accounts for at least some of these benefits as a result of the market process.

The charter equivalent value of the typical 774 mile business trip was \$815. Summed over 10,508 business trips, the total charter equivalent value of business travel on general aviation aircraft was \$8.6 million in 1991.

The grand total of miles flown for both business and recreation was 16.3 million, with a total charter equivalent value for 25,934 trips of \$18.8 million for 1991.

Converted to a daily value, general aviation travel by aircraft owners averages over \$51,500 per day throughout the year.

According to a survey of Falcon Field aircraft owners, the average owner spent \$7,850 during the year on maintenance, fuel, insurance, and storage.

The average outlay for maintenance was \$3,359 per plane. Survey respondents reported that two thirds of maintenance outlays -- 68 cents out of each maintenance dollar -- were made at Falcon Field.

The average value of expenditures for unscheduled and scheduled maintenance (including inspections) for those reporting outlays for maintenance were \$4,056.

In order to examine the relationship between aircraft value and maintenance expenditures, a regression equation was estimated to determine the sensitivity of

maintenance costs to value. These results are shown in the accompanying table. Increases in value of \$1,000 were found to be associated with an increase in annual outlays for maintenance of \$42.50.

Owners of aircraft with values higher than the average of \$56,690 reported spending an average of \$7,524 for annual maintenance. Owners of those aircraft with value below the average spent \$2,624 for maintenance during 1991.

The average annual outlay for fuel for all owners was \$2,577. Insurance was \$1,152 per year, and storage at Falcon Field averaged \$762 per aircraft.

Aircraft owners were asked to briefly comment on the quality of maintenance service available at Falcon Field. Of those responding, four out of five evaluated services in the range of "excellent" to "satisfactory." Verbatim comments from the surveys are listed in an appendix.

## ECONOMIC IMPACT OF GENERAL AVIATION -- OVERNIGHT VISITORS

Falcon Field is one of the most popular destinations in the Southwest for general aviation travelers. During 1991, the airport was host to 1,288 overnight visiting aircraft.

One out of every four overnight visitors came from California. Other states accounting for a significant share of travelers were Arizona (21.8 percent), Texas, and Colorado (both 5.7 percent). The top six states -- incorporating Utah and Washington -- accounted for two thirds of overnight general aviation traveling parties.

More than one half of general aviation travelers (55 percent) reported they were in the Mesa area primarily for business purposes. The remaining 45 percent were primarily traveling for recreation.

The average stay reported by visiting aircraft owners was 4.2 nights, with a range of 1 to 21 nights. The average party size traveling to Mesa Falcon field was 2.8 persons. In total, 15,147 visitor nights were reported for 1991.

The monthly distribution of arriving visitors was bimodal, with peaks in March and November separated by low points in summer and over the December/January months.

Expenditures by visitors arriving on general aviation aircraft summed to \$1.8 million during 1991. The months of peak spending were those of heaviest visitor travel, with \$232,000 spent by travelers in November and \$206,000 in March.

For the year, retail outlays by visitors exceeded one half million dollars, while travelers spent an additional one million dollars on food, lodging, and transportation during their visit.

Daily expenditures for food averaged \$82.17 per party, or \$29.35 per person per day. Average lodging outlays per party were \$70.41. It should be noted that survey responses included those who stayed with relatives or in second homes, and thereby reduced the overall average lodging expenditure.

The "all other" category varied widely among respondents. In addition to such consumer outlays as entertainment, this category included major industrial purchases, such as machinery, and



purchases of aircraft related supplies and services.

Each of the 1,288 overnight visiting parties spent an average of \$1,403 during their 4.2 day stay in the greater Phoenix area. Thus, on average, each overnight tie down represents \$295 expended for lodging, \$345 on food, \$194 on transportation expenses, \$395 for retail goods, and other spending of \$172.

Visitors who arrive in the area via general aviation aircraft create jobs and inject dollars into the local economy. The total \$1.8 million paid out by general aviation travelers directly supported 39

workers in hospitality related and retailing sectors of the metropolitan area, with a payroll of \$575.5 thousand.

After all multiplier effects were incorporated, the total impact of Mesa Falcon Field general aviation visitors is \$3.4 million in the greater Phoenix metropolitan area. Since 67 percent of all expenditures by visitors arriving at Falcon Field are made in Mesa, the total impact to the city is \$2.3 million.

Including multiplier effects, the spending by general aviation visitors provides for 73 jobs in the metropolitan area, with a payroll of one million dollars.

IMPACT OF FALCON FIELD GENERAL AVIATION VISITORS						
	DIRECT IMPACT			TOTAL IMPACT		
Source	Employment	Payroll (\$000)	Economic Activity (\$000)	Employment	Payroll (\$000)	Economic Activity (\$000)
Food	12	\$138.4	\$444.5	23	\$254.8	\$827.0
Lodging	10	135.6	380.9	19	249.3	743.3
Transport	5	122.8	250.6	9	195.0	466.5
Retail	6	100.9	509.5	10	160.2	976.4
Other	6	77.8	222.4	11	141.2	419.0
TOTALS	39	\$575.5	\$1,807.9	73	\$1,000.5	\$3,432.2

Source: Survey of general aviation travelers and RIMS II model.

## AIRPORT REVENUES

Although airports are publicly owned, they usually impose limited burdens on the taxpayer. Falcon Field Municipal Airport creates revenues which are applied against operating costs. During fiscal year 1990 - 1991, non-grant revenues collected by the airport totaled more than one million dollars. Operating revenues have exceeded one million dollars in each year since 1987 - 1988.

Nearly one half of operating revenues were provided by aircraft hangar rental fees of \$526 thousand. Land leases contributed an additional \$389 thousand. The third largest source of revenues was tiedown fees of \$91 thousand, followed by commissions from fuel sales and attendance at the Champlin Fighter Museum.

Major categories of airport expense included depreciation (\$395 thousand), maintenance (\$306 thousand) and administrative outlays (\$321 thousand) such as utilities, equipment, supplies, vehicles, capital outlay and personnel. Apron area improvement was \$125 thousand. Other improvements, including hangar areas and taxiways, were also undertaken. The statement of income for the year showed a net income of \$122 thousand.

## TAX REVENUES CREATED

In addition to providing a significant level of operating revenues, Mesa Falcon Field Airport also contributed sales tax revenues to the community.

The total estimated sales tax revenues created during 1991 were \$5.5 million. McDonnell-Douglas accounted for \$4.8 million of this amount, as tabulated by McDonnell - Douglas officials.

Airport employers reported \$627,400 paid in 1991 in sales tax.

Tourism expenditures created an additional \$125,500 in sales and use taxes, as visitors spent money on food, lodging, and retail goods.

(Other important revenue sources, particularly personal and corporate income taxes, were not compiled as part of this report. Using approximate estimators for federal (15%) and state (5%) income tax, a payroll of \$196 million would create federal personal income tax revenues of over \$29 million and state income tax of an additional \$10 million.)

SALES TAX REVENUES CREATED BY  
FALCON FIELD ECONOMIC ACTIVITY: 1991

SOURCE	AMOUNT
Airport Employers	\$627,400
McDonnell - Douglas	4,800,000
Tourism	125,500
TOTAL	\$5,552,900

## THE FUTURE

Estimates by the U. S. Department of Commerce for the decade of the 1990's project that Arizona will lead the nation in the rate of population growth. The Arizona Department of Economic Security forecasts that Arizona's population will grow by more than 25 percent in the next ten years. Over 60 percent of this population growth will be accounted for by increases in the greater Phoenix area.

The population growth projected for Arizona, the Phoenix metropolitan area, and the East Valley is related to a number of factors, including continued job growth, competitive housing prices, an attractive quality of life, and an overall environment favorable for business expansion. The pace of economic development will undoubtedly be influenced by a myriad of elements, including tax structure, quality of the work force, and supporting infrastructure for commercial enterprise.

Falcon Field Municipal Airport is expected to play an essential role in the continued economic development of Mesa and the East Valley region. As a facility for general aviation aircraft, the airport provides opportunities for corporate and professional travel in private aircraft unrestricted by airline schedules or routing patterns. The availability of modern general aviation airports will be of increasing importance to high technology employers in the years ahead. A listing of tangible and intangible benefits of business aircraft appears in the appendix.

While most overnight visitors to the Mesa Falcon Field airport come from neighboring states, this is not the case with

corporate aircraft traffic. Although California is the source of the largest number of corporate aircraft arriving at Falcon Field, the second largest number of corporate aircraft comes to Mesa from Michigan, and the third greatest number is from Delaware.

These figures suggest that an increasing reliance by business on long range private aircraft will be beneficial for those areas that have facilities and community attitudes that encourage general aviation as a component of economic development.

In addition, the land on and nearby the airport offers a potential location for manufacturing and other businesses, particularly those related to aviation. Firms that provide materials and components to McDonnell-Douglas Helicopter Company should be encouraged to consider Falcon Field as a location.

With over 300 acres available, the airport could serve as the site for one or more major employers or could accommodate mixed use industrial sites including warehousing, light manufacturing and other activity.

Growth projections for the economic impact of Falcon Field were developed based on the following assumptions: (1) McDonnell Douglas Helicopter Company employment will increase by 800 workers by the year 2000 and thereafter remain stable; (2) FBO and other activity on the airport will increase as based aircraft grow and the general economy expands; (3) the charter equivalent value of based aircraft travel will increase at the rate of growth projected for number of based aircraft; (4)

the economic impact of general aviation visitors will increase at the rate of growth projected for itinerant operations.

Given these assumptions, the direct economic impact of the airport (in constant 1991 dollars) will be \$345 million in 2000, an increase of 25 percent.

The influence of McDonnell Douglas Helicopter is assumed to increase by more than 20 percent by the year 2000. Meanwhile, the direct economic impact of FBO's, other aviation related activity, tenants, and government agencies on the airport is projected to increase from \$29.9 million in 1991 to \$44.2 million in the year 2000, an increase of 48 percent.

Employment by FBO's and additional airport firms and agencies other than McDonnell Douglas will rise from the current level of 520 to 781 during the remainder of the decade. This projection is based on the conservative assumption that there will be no relocations of major employers onto the airport.

Total economic activity, including all multiplier effects, will rise at similar growth rates over the decade ahead. By the year 2000, the total economic impact of the airport, allowing for all multiplier effects, will be \$938 million.

By that year, based aircraft will fly passenger miles with a charter value of \$22.2 million and visitors arriving by general aviation aircraft will spend over \$2 million per year in the area, in constant dollars.

Figures for the year 2015 show direct economic activity associated with the presence of the airport of \$356 million and a total impact, after multiplier effects, of \$966 million.

These projections are subject to modification if McDonnell Douglas Helicopter activity levels vary from the initial assumptions over the years ahead. In addition, it is likely that additional tenants will seek the airport as a site for manufacturing or other aviation related activity, which will raise the employment and economic impact of the airport.

## SUMMARY AND PROJECTIONS OF ECONOMIC IMPACT

### SUMMARY AND PROJECTIONS OF ECONOMIC IMPACT OF FALCON FIELD AIRPORT (PAYROLL AND ECONOMIC ACTIVITY IN THOUSANDS OF 1991 DOLLARS)

Source	1991 Employment	1991 Payroll	1991 Activity	2000 Employment	2000 Payroll	2000 Activity	2015 Employment	2015 Payroll	2015 Activity
McDonnell Douglas	3,558	\$183,700	\$225,700	4,358	\$225,004	\$276,448	4,358	\$225,004	\$276,448
FBO's/Aviation Firms	290	4958	19,786	435	7,437	29,679	499	8,530	34,042
Airport Tenants	103	1122	2,864	155	1,683	4,296	177	1,930	4,928
Government	127	5578	6,843	191	8,367	10,265	219	9,597	11,773
Visitors	56	833	2,614	68	1,008	3,163	89	1,320	4,143
GA Aircraft Travel			18,776			22,250			25,520
Direct Impact	4,134	\$196,191	\$276,583	5,206	\$243,499	\$346,100	5,341	\$246,382	\$356,854
Indirect Impact	7,566	\$159,600	\$474,470	9,528	\$198,085	\$593,724	9,776	\$200,430	\$612,173
TOTAL IMPACT	11,700	\$355,791	\$751,053	14,733	\$441,584	\$939,823	15,117	\$446,812	\$969,027

STATE OF ORIGIN OF CORPORATE AIRCRAFT ARRIVING  
AT MESA FALCON FIELD AIRPORT: 1991

California (8 = 20.5%)

Michigan (5 = 12.8%)

Delaware (3 = 7.7%)

Nevada (3 = 7.7%)

Oregon (3 = 7.7%)

Arizona (2 = 5.1%)

Ohio (2 = 5.1%)

Oklahoma (2 = 5.1%)

Texas (2 = 5.1%)

Utah (2 = 5.1%)

All Other (7 = 18.1%)



# TOTAL ECONOMIC IMPACT OF FALCON FIELD AIRPORT: 1991

Source	Employment	Payroll (\$000)	Economic Activity (\$000)
McDonnell Douglas Helicopter Company	3,558	\$183,700	\$225,700
FBO's And Aviation Related Firms	290	4,958	19,786
Airport Tenants	103	1,122	2,864
Government Agencies	127	5,578	6,843
General Aviation Visitors	39	576	1,808
Charter Value of Based Aircraft Travel			18,776
McDonnell Douglas Visitors	17	257	806
Direct Economic Impact	4,134	\$196,191	\$276,583
Indirect Economic Impact	7,566	\$159,600	\$474,470
Total Economic Impact	11,700	\$355,791	\$751,053

## APPENDICES

- A. Tangible and Intangible Benefits of Business Aircraft
- B. Verbatim Comments On FBO Service
- C. Expenditures by McDonnell Douglas  
Helicopter Company Overnight Visitors
- D. Survey Forms
  - Falcon Field Aircraft Owners
  - Falcon Field Businesses
  - General Aviation Visitors

## TANGIBLE AND INTANGIBLE BENEFITS OF BUSINESS AIRCRAFT

### *Tangible Benefits*

*Cost Savings*

*Personnel Time Savings*

*Flexibility*

*Enhanced Mental Alertness*

*Work En Route*

*Reduction of Overnight Stays*

*Carriage of Mail and Cargo*

### *Intangible Benefits*

*Attraction and Retention of Key Personnel*

*Upgrading of Customer Relationships*

*Enhanced Entrepreneurship*

*Community Service*

Source: Business Aircraft Operations: Financial Benefits  
and Intangible Advantages, PRC Aviation,  
Tucson, Arizona, 1987.

VERBATIM COMMENTS ON FBO SERVICE  
MESA FALCON FIELD AIRPORT

Survey asked to "Please briefly evaluate Falcon Field maintenance services." Figure in parentheses is reported value of aircraft.

*I think they are excellent. (\$38,000)*

*Little Flyers is excellent. (\$33,000)*

*Fuel is very favorable, maintenance is overpriced. (\$17,500)*

*Need painting facilities. (\$150,000)*

*Quantity selection is poor, quality is average. (\$75,000)*

*Very good facilities. (\$18,000)*

*Good -- particularly impressed by Flight Trails Helicopter, avionics services. (\$35,000)*

*Lycon is outstanding engine shop. (\$35,000)*

*Above average. (\$175,000)*

*Very limited and costly. (\$18,000)*

*Too expensive. (\$12,500)*

*Excellent for radios. (\$17,000)*

*Minimal but adequate. (\$105,000)*

*Excellent at SAS. (\$65,000)*

*Superb at Cactus Aviation. I have nothing but good to say about them. (\$24,000)*

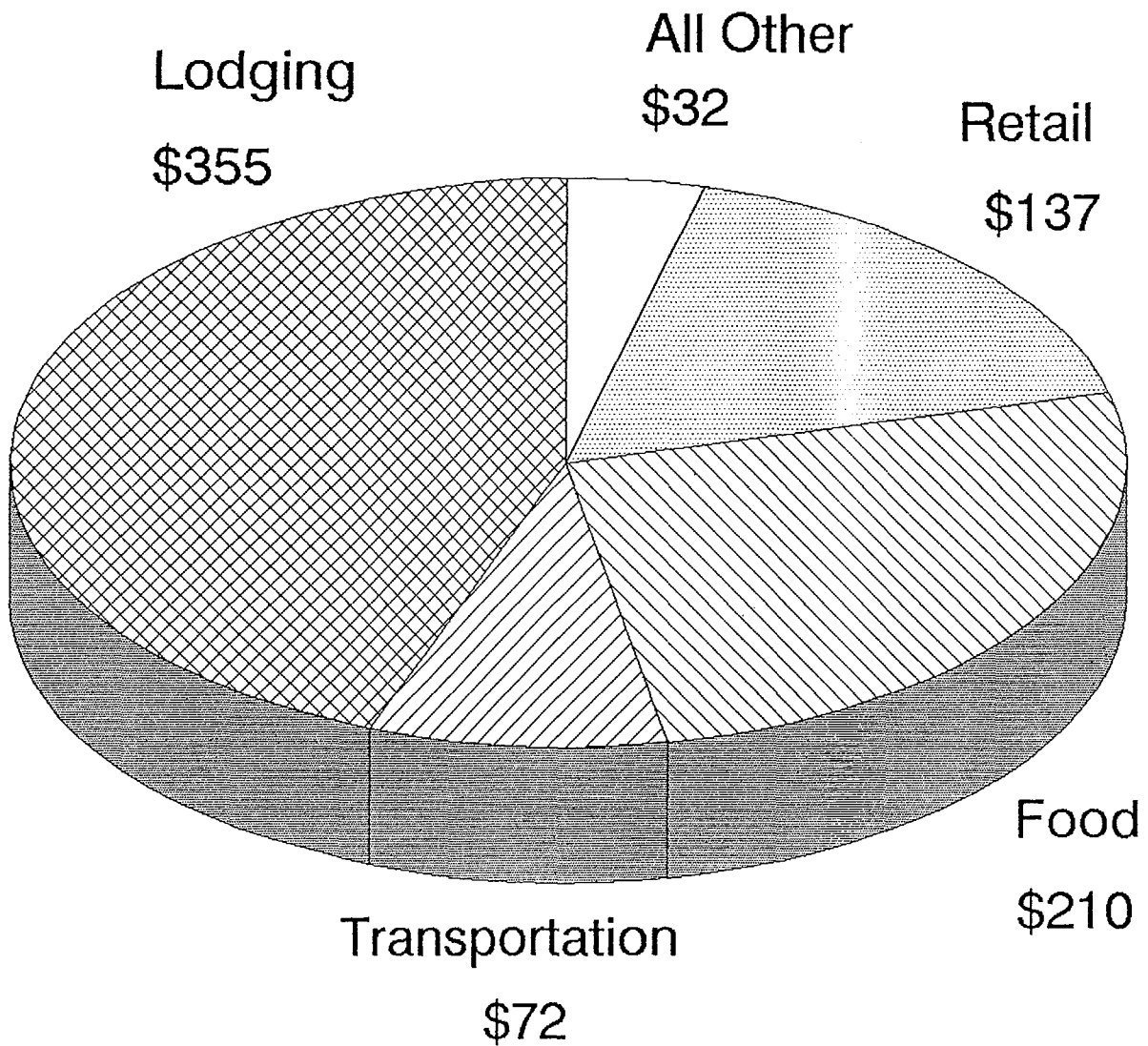
*Service is good but prices are high. (\$15,000)*

*Need more competition for radio work. (\$75,000)*

*Engine overhaul is excellent, mechanical good, avionics substandard, no painting. (\$75,000)*

*Excellent variety and reliable quality. (\$40,000)*

**EXPENDITURES BY OVERNIGHT VISITORS TO  
McDONNELL DOUGLAS HELICOPTER COMPANY  
(Thousands of Dollars)**



Total 1991 Expenditures: \$806 Thousand

CONFIDENTIAL MATERIAL

MESA FALCON FIELD AIRPORT VISITOR SURVEY

This survey is being conducted to measure the impact of general aviation visitors on the economy of Mesa and the Phoenix metropolitan area. We hope you will take a few moments to complete this survey to help us illustrate the role of aviation in the local economy. Responses from individuals will be strictly confidential, with only cumulative totals released. For further information regarding the survey call Lee McPheters at ASU (800 - 448 - 0432) or contact Mark Meyers, Falcon Field Airport (602 - 644 - 2444). We sincerely appreciate your cooperation.

YOUR STATE OF RESIDENCE \_\_\_\_\_

PRIMARY TRAVEL PURPOSE: Business \_\_\_\_\_ or Recreation \_\_\_\_\_

1. PARTY SIZE. How many persons in total were in your travel party arriving at Falcon Field Airport (if more than one trip, what was the typical party size)? \_\_\_\_\_
2. LENGTH OF STAY. How many days did you stay in the greater Phoenix area (if more than one trip, what was the typical stay)? \_\_\_\_\_
3. EXPENDITURES. Please estimate the average daily expenditures for your entire party for each item below during your visit to the Phoenix area (if more than one trip, provide estimates for a typical trip).

FOOD AND BEVERAGES \_\_\_\_\_

LODGING \_\_\_\_\_

TRANSPORTATION  
(SUCH AS AUTO RENTAL, GAS, TAXI) \_\_\_\_\_

RETAIL PURCHASES \_\_\_\_\_

OTHER (SPECIFY \_\_\_\_\_) \_\_\_\_\_

4. What percentage of your expenditures were in Mesa vs. the remainder of the Phoenix metropolitan area?

Percent Mesa \_\_\_\_\_ Percent Rest of Phoenix Metro Area \_\_\_\_\_

PLEASE RETURN THIS SURVEY WITHIN 10 DAYS IN THE ENCLOSED ENVELOPE TO

ECONOMIC OUTLOOK CENTER  
COLLEGE OF BUSINESS  
ARIZONA STATE UNIVERSITY  
TEMPE, ARIZONA 85287 - 4406

CONFIDENTIAL MATERIAL

GENERAL AVIATION SURVEY  
FALCON FIELD MUNICIPAL AIRPORT

This survey is being conducted to tabulate the impact of Falcon Field Municipal Airport on the economy of Mesa and the greater Phoenix metropolitan area. Responses from aircraft owners will be strictly confidential with only cumulative totals released. Your cooperation in this effort to measure the importance of aviation to the local economy is greatly appreciated. For further information regarding the survey call Lee McPheters at ASU (965 - 5543) or contact Mark Meyers, Falcon Field Municipal Airport (644 - 2444).

1. How many aircraft do you have based at Falcon Field? \_\_\_\_\_
2. Please estimate the 1991 market value of your aircraft. \_\_\_\_\_
3. What was the total number of trips taken during 1991 in your aircraft?  
Business Trips \_\_\_\_\_ Recreational Trips \_\_\_\_\_
4. What was the average number of persons on these trips (exclude professional pilot and crew)?  
Business Trips \_\_\_\_\_ Recreational Trips \_\_\_\_\_
5. Please estimate the average one way mileage for a typical trip of each type during 1991.  
Business Trips \_\_\_\_\_ Recreational Trips \_\_\_\_\_
6. Please estimate annual outlays on each of the following aircraft expenses.  
Maintenance: scheduled \_\_\_\_\_ unscheduled \_\_\_\_\_ Fuel \_\_\_\_\_  
Inspections \_\_\_\_\_ Insurance \_\_\_\_\_ Storage Charges \_\_\_\_\_
7. What percent of maintenance is done at Falcon Field? \_\_\_\_\_ Please briefly  
evaluate Falcon Field maintenance services:  
\_\_\_\_\_

PLEASE RETURN THIS SURVEY WITHIN 10 DAYS IN THE ENCLOSED ENVELOPE TO

ECONOMIC OUTLOOK CENTER  
COLLEGE OF BUSINESS  
ARIZONA STATE UNIVERSITY  
TEMPE, ARIZONA 85287 - 4406

CONFIDENTIAL MATERIAL

AIRPORT BUSINESS SURVEY  
FALCON FIELD MUNICIPAL AIRPORT

This survey is being conducted to tabulate the impact of Falcon Field Municipal Airport on the economy of Mesa and the greater Phoenix metropolitan area. Responses from individual firms will be strictly confidential with only cumulative totals released. Your cooperation in this effort to measure the importance of aviation to the local economy is greatly appreciated. For further information regarding the survey call Lee McPheters at ASU (965 - 5543) or contact Mark Meyers, Falcon Field Municipal Airport (644 - 2444).

COMPANY NAME: \_\_\_\_\_ Form Completed By: \_\_\_\_\_

1. What was the average number of employees your firm had on the airport during 1991? \_\_\_\_\_

2. What was your 1991 payroll for employees on the airport? \_\_\_\_\_

3. Please estimate your firm's total receipts for sales of goods and services in 1991.  
(If government agency, please estimate total budget.) \_\_\_\_\_

4. Please estimate taxes paid during 1991.

Local \_\_\_\_\_ State \_\_\_\_\_ Federal \_\_\_\_\_

5. What were construction outlays during 1989 - 1991? \_\_\_\_\_

6. We are also attempting to measure the total economic value of the enterprises located on the airport. If possible, please estimate the current fair market value of

Your Business \_\_\_\_\_ The Property and Improvements \_\_\_\_\_

PLEASE RETURN THIS SURVEY WITHIN 10 DAYS IN THE ENCLOSED ENVELOPE TO

ECONOMIC OUTLOOK CENTER  
COLLEGE OF BUSINESS  
ARIZONA STATE UNIVERSITY  
TEMPE, ARIZONA 85287 - 4406